

WHAT I CLAIM IS:

1. An inline air filter for use in the air intake systems of fuel injected engines comprising:

two housings;

5 a foam filter;

two mesh filters;

two housing grommets; and

two clamps.

2. The inline air filter of claim 1 wherein each of the two housings have a
10 plurality of protrusions with each protrusion having a fastener opening.

3. The inline air filter of claim 2 wherein the foam filter, the two mesh filters are installed between the two housings and the two housings are installed together with a set of fasteners.

4. The inline air filter of claim 3 wherein the fastener opening in the plurality
15 of protrusions are configured such that one set of fastener openings in one of the two housings has a clearance hole for the fasteners, while the other of the two housings has threaded holes to match the fasteners, and wherein the set of fasteners used to install the two housings together are one of either threaded screws or threaded bolts.

5. The inline air filter of claim 4 wherein the two housings are made from a
20 metallic material.

6. The inline air filter of claim 5 wherein the each of the two housings includes a generally cone-shaped portion and a generally cylindrical portion.

7. The inline air filter of claim 6 wherein each of the two housings has at least one air flow opening located in the cone shaped portion.

8. The inline air filter of claim 7 wherein the generally cylindrical portion of each of the two housings comprises a plurality of alternating curved flanges and curved openings.

9. The inline air filter of claim 8 wherein the two housing grommets are generally ring shaped and are configured to fit within the opening of the generally cylindrical shaped portion of the two housings.

10. The inline air filter of claim 9 wherein the two housing grommets have an inside circumferential surface having an inside diameter sized to fit an outside diameter of an air intake tubing of a gasoline engine, the inside diameter, being sized such that when the inline filter is installed, entrance of air between the inside circumferential surface and an outside surface of the air intake tubing is minimized.

11. The inline air filter of claim 10 wherein each of the two housing grommets has a plurality of indented surfaces on its outer circumferential surface.

12. The inline air filter of claim 11 wherein the plurality of indented surfaces are located and shaped to match the location and shape of the plurality of alternating curved flanges and curved openings in the main housing.

13. The inline air filter of claim 12 wherein the radial depth of the plurality of indented surfaces in each of the two housing grommets is such that each of the two housings can be installed over the housing grommet such that there is a slight interference fit between inner surfaces of the curved flanges of the housings and the plurality of indented surfaces, the slight interference fit resulting in a snug fit between

the inside circumferential surface and the outside surface of the air intake tubing after the two housing grommets and the two housings have been installed over the air intake tubing and each of the clamps has been positioned and tightened over each of the housing grommets.

5 14. The inline air filter of claim 13 wherein the foam filter is made from a flexible reticulated polyurethane foam material.

 15. The inline air filter of claim 14 wherein the foam material is washable, has a three dimensional cellular structure and is operable within the temperature range of from about +225 degrees Fahrenheit to about - 40 degrees Fahrenheit.

10 16. The inline air filter of claim 15 wherein the mesh filter is made from a metallic screen material having a wire about 0.015 inches thick.

 17. The inline air filter of claim 16 further comprising a foam filter support.

 18. The inline air filter of claim 17 wherein an installation of the inline air filter includes splicing the inline air filter into the air intake tubing of an air induction system of
15 a fuel injected engine.

 19. The inline air filter of claim 18 wherein the inline air filter has an air flow rate of at least 227 cubic feet per minute.

 20. The inline air filter of claim 19 wherein the inline air filter filters out debris having a size of at least 25 microns.

20 21. A process of using a inline air filter for filtering air in conjunction with an air intake system of an internal combustion engine comprising the steps of:

 providing a foam filter;

 providing a mesh filter;

providing a main housing, the main housing comprising two housings, two

housing grommets; and two clamps;

assembling the foam filter and the mesh filter onto the housing to make an

inline air filter; and

5 installing the inline air filter onto a component of an air intake system
of a fuel injected engine.

22. The process of claim 21 further comprising the step of making the foam
from a three dimensional cellular structure and is operable within the temperature range
of from about +225 degrees Fahrenheit to about - 40 degrees Fahrenheit.

10 23. The process of claim 22 further comprising the step of making the mesh
filter from a metallic screen material having a wire about 0.015 inches thick.

24. The process of claim 23 wherein the step of installing the inline air filter
onto a component of an air intake system of a fuel injected engine includes splicing the
inline air filter into an air intake assembly for an air induction system of a fuel injected
15 engine.

25. The process of claim 24 wherein the assembled inline air filter has an air
flow rate of at least 227 cubic feet per minute and wherein the assembled inline air filter
filters out debris having a size of at least 25 microns.

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